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Burnout and engagement in higher education:

Relationships with social support, guidance and sense of belonging

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Korkeakouluopiskelijoiden hyvinvointiin on alettu kiinnittää huomiota entistä enemmän niin Suomessa kuin kansainvälisestikin. Korkeakouluopinnot ovat tavoitteellisen luonteensa vuoksi monella tapaa rinnastettavissa työntekoon. Näin ollen opiskelijoiden tutkimuksessa on alettu hyödyntää käsitteitä, jotka ovat alunperin peräisin työelämän tutkimuksesta. Uupumus ja työn imu ovat tällaisia käsitteitä, joita on alettu soveltaa niin alemmilla koulutustasoilla kuin korkeakoulukontekstissakin. Tutkimuksessa puhutaan opiskelu-uupumuksesta, mutta työn imusta on alettu uudessa kontekstissa käyttää käsitettä opiskeluinto. Uupumus on seurausta tilanteista, joissa opintojen vaatimukset ylittävät opiskelijalla käytössä olevat resurssit ja opiskeluinto puolestaan liittyy näiden vaatimusten ja resurssien parempaan tasapainoon. Tämän tutkielman tavoitteena oli lisätä ymmärrystä korkeakouluopiskelijoiden sosiaalisista resursseista, jotka toisaalta voivat toimia uupumukselta suojaavina tekijöitä ja toisaalta taas lisätä opiskelijoiden innostusta opintojaan kohtaan. Tutkielmassa tarkasteltiin miten sosiaalinen tuki, oppilaitoksen taholta saatu ohjaus ja neuvonta sekä opiskeluun liittyviin ryhmiin kuuluminen ovat yhteydessä uupumusriskiin ja opiskeluintoon.

Tutkielman aineistona oli Ylioppilaiden terveydenhoitosäätiö YTHS:n toteuttama Korkeakouluopiskelijoiden terveystutkimus vuodelta 2016, joka on edustava otos yliopisto- ja ammattikorkeakouluopiskelijoista Suomessa (N=3110). Aineistossa opiskelijoiden kokemaa uupumusta mitattiin SBI-9 -mittarilla ja opiskeluintoa OpInto -mittarilla ja näiden kokonaispistemääriä tarkasteltiin analyyseissa yhdessä sosiaalisen tuen, opintoihin saadun ohjauksen sekä opiskeluun liittyviin ryhmiin kuulumisen kanssa. Analyyseissa tarkasteltiin Pearsonin korrelaatiokertoimia, joiden lisäksi muodostettiin hierarkisella regressioanalyysilla erilliset uupumusta ja opiskeuintoa selittävät mallit. Selittäjinä malleissa olivat sosiaaliset resurssit ja vakioitavina muuttujina mukana olivat opintojen vaihe, sukupuoli sekä oman opiskelualan kokeminen itselle sopivaksi.

Tulokset tukivat asetettuja hypoteeseja sekä aikaisempaa tutkimusta. Ne osoittivat, että ne opiskelijat jotka kokivat voivansa keskustella heille tärkeistä asioista jonkun kanssa, saivat tukea ja ohjausta oppilaitokseltaan sekä tunsivat kuuluvansa opiskeluun liittyviin ryhmiin kokivat vähemmän uupumuksen oireita. Vastaavasti näiden sosiaalisten resurssien riittävyys oli yhteydessä korkeampaan opiskeluintoon. Tulokset antavat tukea sosiaalisten resurssien merkityksestä opiskelijoiden hyvinvoinnin kannalta. Tulevaisuudessa tutkimuksen tulisi tarkastella näitä resursseja hyödyntäen tarkempia mittareita esimerkiksi sosiaalisen tuen muotojen tai eri opiskeluihin liittyvien ryhmien osalta.

Avainsanat – Nyckelord – Keywords

korkeakoulu, opiskelu, uupumus, opiskeluinto, sosiaalinen tuki

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Abstract

There has been increasing research attention on wellbeing of students in higher education both in Finland and internationally. Because of its goal-oriented nature, higher education resembles working in many ways. Thus, research on students´ wellbeing has started utilizing concepts derived from occupational research. Burnout and study engagement are concepts that are being used in research on both lower educational levels and higher education. Burnout describes feelings of exhaustion, cynicism and inadequacy experienced when demands of studying exceed available resources. Engagement on the other hand means feeling vigorous, dedicated and absorbed in studying and arises when demands and resources are better balanced. The goal of this thesis was to increase understanding of social resources that can guard against the negative effects of demands and foster engagement in higher education. It investigated how social support, guidance and counselling from the educational institution and sense of belonging to studying related groups are related to burnout and engagement experienced by students.

The data for this study was the Finnish Student Health Service´s Student Health Survey from 2016, which is a representative sample of students in universities and universities of applied sciences in Finland (N=3110). Burnout symptoms were measured using the SBI-9 measure and engagement using the Schoolwork Engagement Scale. The total scores on these two scales were analyzed together with social support, guidance and counselling and sense of belonging to studying related groups. Pearson´s correlation coefficients were obtained to reveal the bivariate associations of these variables followed by two hierarchical regression analyses on burnout and engagement individually. All of the social resources were included as predictors in these models and the stage of studies, gender and feeling of being in the right field of study were controlled for as background variables.

The results supported both hypotheses and existing literature. It was found that those students who were able to talk about their matters with someone, had received guidance to their studies and felt like they belong to studying related groups had lower levels of burnout symptoms. Similarly, students with sufficient social resources were more engaged in their studies. The results indicate that social resources are an important factor in wellbeing of higher education students. Future research should continue to further study these resources using more accurate measures incorporating different types of social support or different groups in the educational context.

Keywords
higher education, studying, burnout, engagement, social support, belonging

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1 INTRODUCTION

Higher education resembles working in many ways. Along their studies, students complete a wide range of courses with different topics, read literature related to these topics and work in co-operation with other students to deepen their understanding and to come up with solutions to different assignments they are given. Just like working life, higher education requires students to set both long-term and short-term goals and monitor their efforts towards them while managing deadlines for various tasks. This similar nature means that some of the demands but also sources for satisfaction are comparable between these two domains. While occupational wellbeing has been an important area of research for a long time, more recently increasing interest has been directed towards investigating wellbeing in educational contexts.

In 2017, there were over 275 000 people pursuing either bachelor´s or master´s degree at universities and universities of applied sciences in Finland (Statistics Finland A; B). The Ministry of Education and Culture´s vision for 2030 is that half of young adults aged 25-34 will have completed higher education degrees (Minedu). Given the fact that students in higher education make up such a considerable population, it is clear that investing on their wellbeing and motivation is important not only for students themselves but for broader societal implications as well. Over the last decade there has been increasing political debate about speeding up the attainment of higher education degrees and making the transition from studying to working life more seamless (Lehikoinen, Heinonen, Korhonen, Palonen & Vuorinen, 2010). One way to reach these goals has been limitations regarding the time students have to complete their degrees. While these kinds of regulatory actions may be part of the solution, they are not adequate alone. What really drives students through their studies is a sense of meaning and genuine interest in gaining knowledge in their field. On the other hand, overwhelming demands from studies combined with lack of resources to deal with them leads to suffering of the individuals as well as prolonged studies.

Compared to secondary studies, higher education requires new kind of approach to learning as studying is more autonomous. In lower education levels, the emphasis is on providing general education and students are expected to learn basics from wide range

of subjects. Towards the end of secondary studies, students have to make long spanning decisions about where their professional interests could be and where they want to direct their education. Many people starting their education are on the edge of a developmental stage described as emerging adulthood, which is characterized by increasing amount of important decisions about their own life. Social roles can feel unstructured as students move from dependent adolescence to adult life full of responsibilities (Arnett, 2000). In higher education, students focus on chosen narrower field in which they aim to become specialists. In addition to choosing the field they want to study, students have to make decisions among various courses and minor subjects to further tailor their degrees. This increased autonomy and responsibility over own studies can have both positive or negative effects on students´ wellbeing, depending on how well they are able to adapt to this environment.

Early in their studies, students will realize that surface learning that might have worked on lower levels proves to be insufficient, as studies require deeper understanding and ability to evaluate information. Additionally, instruction by the teaching staff might be given at more general level and students have to find the core of the subject matter to be learned and decide how to approach it (Heikkilä, Keski-Koukkari & Eerola, 2011). It can be stressful for students if they are unaware that this active and self-governing role is expected from them (Hassel & Ridout, 2018). Furthermore, it is not just studying itself causing stress to students. Since many people also start their studies later in life, another set of demands may rise from combining family life or full time work with studying. Many people also move to another city or even another country for their studies, which requires even further effort to adapt. Looking at the Student Health Surveys of Finnish higher education students between 2000 and 2016, a rising trend can be seen in the prevalence of psychological symptoms such as depression, anxiety or sleep problems. Additionally, a third of all the students experience problems in getting a grip of their own studies (Kunttu, Pesonen & Saari, 2017). Some research even indicates that compared to the general population, students´ show higher rates of psychological distress (Stallman, 2010).

While looking at these worrying findings, the positive impact of higher education should not be disregarded. Being able to tailor own degrees and choose which courses to follow makes it possible to focus on subjects that students feel interested in. The de-

mands of studies should not be framed as inherently negative as the challenging nature of education may provide feelings of mastery, personal growth and accomplishment. For many people, student life is also about meeting new people, making lifelong friends and attending different activities organized by the many student organizations. Deci and Ryan (2000) have suggested that we can understand human motivation by looking at three basic needs of autonomy, competence and relatedness. Through the lens of this theory, higher education makes students feel more competent through acquiring new skills and knowledge, makes them feel more autonomous by requiring to actively manage own performance and decisions and finally provide strong and long lasting relationships with others. Research has shown that among Finnish higher education students, over 70% are satisfied with the content and quality of teaching and feel like higher education suits them well (Potila, Moisio, Ahti-Miettinen, Pyy-Martikainen & Virtanen, 2017).

How can it be explained that at the same time students seem satisfied with their studies but are also at risk for decreased mental wellbeing? Kunttu (2011) has conceptualized studying ability and its constituents in a model where students´ ability to study depends on the interplay of their studying skills, personal resources, studying environment and teaching activities. The tenet behind the model is that studying can be seen as students´ work and thus studying in many ways resembles working in occupational contexts. Thus, improving wellbeing among students´ requires understanding of all the factors that contribute to it. This thesis aims to help increase this understanding by investigating how different social resources in students´ lives are related to signs of burnout and experiences of engagement. More specifically, these social resources are operationalized as being able to discuss important matters and problems with close people, experiencing sufficient guidance and counselling from the educational institution and feeling belongingness with different groups within the educational environment. The analyses are based on data of the latest Student Health Survey from 2016 (Kunttu et al., 2017) conducted by the Finnish Student Health Service (FSHS), with a representative sample of higher education students in universities and universities of applied sciences in Finland.

2 THEORY

2.1 Studying related burnout

Burnout is a widely studied concept in organizational research, which in the beginning was thought to be exclusively characteristic to human service occupations (Maslach, Schaufeli & Leiter, 2001; Schaufeli, Leiter & Maslach, 2009) and most of its negative effects were seen to originate from interpersonal aspects of working with people in emotionally difficult situations (Etzion, 1984). Maslach and Jackson (1981) defined it as a *"syndrome of emotional exhaustion and cynicism that occurs frequently among individuals who do "people work" of some kind"*. Since the early research, the concept has broadened its scope to include demands of work in general, not just interpersonal relationships (Leiter & Schaufeli, 1996). This broader definition has made it possible to use the concept of burnout to understand the effects of strain in a variety of contexts, such as education (Schaufeli, Martínez, Pinto, Salanova & Bakker, 2002). Based on the original definition, studying related burnout can be defined as a psychological syndrome that encompasses emotional exhaustion that follows from perceived high demands of studies, development of a cynical and detached attitude towards own studies and feelings of inadequacy as a student (Schaufeli et al., 2002; Kiuru, Aunola, Nurmi, Leskinen & Salmela-Aro, 2008).

Emotional exhaustion component of burnout refers to a state characterized by strain, stress and fatigue that follows when the student perceives study load to be overtaxing (Salmela-Aro & Read, 2017). It is often the most visible sign of burnout and might develop as a consequence in situations where students have to exert high effort in order to succeed through courses, pass exams or meet the deadlines for assignments. Exhaustion follows when students feel that they lack either physical, psychological or interpersonal resources to meet these demands. What is important in the definition is whether the student perceives these demands as overtaxing. It has been suggested that subjective responses to workload might have a more significant role in the development of burnout than the workload itself (Jacobs & Dodd, 2003). Cynicism relates to students´ feelings about the meaningfulness of their studies. Highly exhausted students might lose their interest in their studies because of the mismatch between perceived demands and available resources. Cynical attitude and discounting the importance of one´s studies may serve as a way of coping with the stressful situation. The final element of burnout, inad-

equacy, refers to students´ deteriorating self-image as a student. It often includes feelings of not having what it takes to succeed in own studies.

While there seems to be agreement that burnout should be viewed as a process where exhaustion, cynicism and inadequacy follow each other in some order, there have been mixed findings for these relationships. Leiter (1989) has proposed emotional exhaustion to be the primary driver in the burnout process, predicting both cynicism and inadequacy. Golembiewski (1989) suggested that cynicism is the first sign followed by feelings of inadequacy ultimately leading to emotional exhaustion. More recently, a new model (Figure 1) integrating the previous models was presented where emotional exhaustion impacts feelings of inadequacy both directly and through cynicism (Taris, LeBlanc, Schaufeli & Schreurs, 2005).

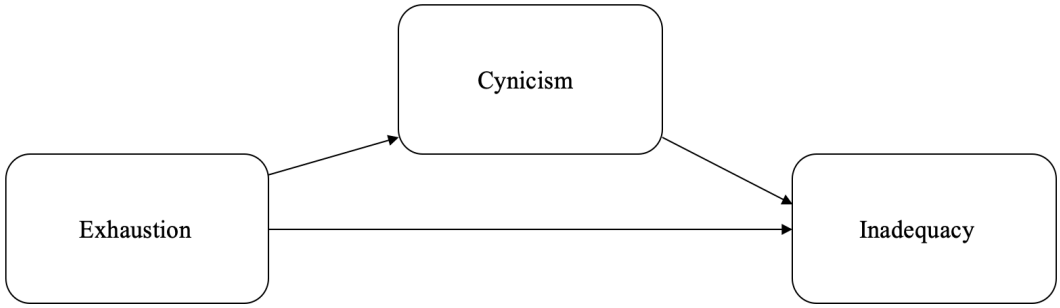

Figure 1. Process of burnout (Taris et al., 2005).

Burnout is often associated with many other wellbeing related phenomena, such as stress, anxiety, dissatisfaction and depression (Maslach & Schaufeli, 2017). Most often burnout has been compared to stress and depression. Stress can be seen as a process where an individual makes an appraisal of some situation and mirrors it´s demands on available resources (Lazarus & Folkman, 1984). Burnout can be one possible consequence if the person is not able to cope with these demands. The debate regarding the distinction and relationship of burnout and depression has been ongoing, as they have been shown to be highly correlated across wide range of work and work-like contexts (Bianchi, Schonfeld & Laurent, 2015). One aspect of this debate is about the similar symptomatology of these concepts. It has been suggested that while depression is

strongly linked to general feelings of defeat and lack of interest, burnout can be seen as more context specific (Brenninkmeyer, van Yperen & Buunk, 2001). Whereas depression is a more pervasive state and its causes are more varied, studying related burnout is stemming more specifically from demands of studies (Salmela-Aro & Read, 2017). Rather than being fully overlapping concepts, prolonged burnout can be seen to contribute to development of depression (Salmela-Aro, Savolainen & Holopainen, 2009).

In addition to these negative effects burnout may have on mental health, it has been suggested that burnout also has negative effects on performance. However, research findings on the relationship between burnout and performance has been generally mixed due to differences in measurement (Schaufeli et al., 2002; Taris, 2006). Jacobs and Dodd (2003) found the emotional exhaustion component to be associated with lower academic performance as measured by grade point average. On the other hand, Salanova, Schaufeli, Martinez and Bresó (2010) could not predict future performance with burnout, even though it was associated with different performance related obstacles and facilitators. Whether it comes down to reduced performance or direct wellbeing related issues, exhausted and cynical students with lack of feelings of accomplishments might not have interest to keep pursuing their degrees. Research has also linked experiences of burnout to students´ intentions to drop out their studies (Moneta, 2011; Bask & Salmela-Aro, 2013).

While situational factors play a major role in the burnout process, some people might be more prone to it. In their meta-analysis, Alarcon, Eschleman and Bowling (2009) found supporting evidence for relationships between the big five personality traits and burnout. Specifically, extraversion, conscientiousness and agreeableness were all negatively related to emotional exhaustion and cynicism and positively related to personal accomplishment (inversed inadequacy). A study by Morgan and de Bruin (2010) indicates that in addition to extraversion and conscientiousness, neuroticism was also related to all of the components of burnout in South African university students so that higher scores on neuroticism predicted higher burnout. While high conscientiousness is generally negatively related to burnout, a study of Korean undergraduate students showed negative perfectionism to be associated with amotivation, which in turn predicted more burnout. In addition to differences in personality, burnout has also been linked to self-efficacy. For example, Ventura, Salanova and Llorens (2015) studied secondary school teachers

and found out that lower level of professional self-efficacy was related to experiencing more negative demands at work, which in turn predicted higher levels of burnout. Similarly, Bilge, Tuzgol Dost & Cetin (2014) found lower self-efficacy to predict higher levels of burnout in a sample of high school students.

Research on possible gender differences in risk for burnout is generally mixed. Galán, Sanmartin, Polo and Giner (2011) studied medical students and found no significant relationship between gender and the subscales of burnout. A meta-analysis by Purvanova and Muros (2010) found no significant differences in the overall burnout levels between genders, but their results indicate that women show slightly higher scores on emotional exhaustion subscale and men on the depersonalization (cynicism) subscale. In their sample of university students, Weckwerth and Flynn (2006) also found support for higher ratings of depersonalization for men but instead of emotional exhaustion, women showed slightly lower levels of personal accomplishment (inadequacy).

2.2 Study engagement

Psychological research experienced a shift in its focus at the turn of the millennium. Research in psychology has traditionally been heavily focused on different factors that negatively affect wellbeing. This general emphasis on the negative side of things such as stress, depression or anxiety has also been the main focus in studies on wellbeing in educational contexts. While understanding these issues has remained important, the aim of research has shifted from merely trying to understand and prevent negative outcomes, towards building a clearer picture of things that can foster wellbeing – a more positive psychology (Seligman & Csikszentmihalyi, 2000). One concept in the organizational research following this increased attention towards the positive has been work engagement. Work engagement is a positive, fulfilling affective-motivational work related state of mind characterized by vigour, dedication and absorption (Schaufeli et al., 2002; Bakker, Schaufeli, Leiter & Taris, 2008). Similar to burnout, this definition of work engagement has later been adapted to research on engagement in educational contexts (Schaufeli et al., 2002; Salmela-Aro & Read, 2017).

Vigour refers to feeling energized while working or studying, being able and willing to invest effort in own work and having mental resilience to persist in the face of challeng-

es (Schaufeli et al., 2002). Vigorous students are full of energy while studying and will not give up easily even if challenges arise. Dedication has to do with enthusiasm and pride towards own work and feeling the work as significant and challenging (González-Romá, Schaufeli, Bakker & Lloret, 2006). Absorption means high concentration and immersion in one´s own work which is accompanied by being carried away and feeling like time passes by quickly (Schaufeli et al., 2002). Given the similar characteristics, this dimension of engagement is often compared to the concept of flow. Flow is a state of deep intrinsic motivation and focused concentration, where actions and awareness seem to merge (Nakamura & Csikszentmihalyi, 2009). However, whereas flow describes a momentary experience in some particular situation, absorption and engagement generally refer to a more persistent and general state (Schaufeli et al., 2002).

It is worth noting that the concept of study engagement in the literature uses different definitions. The definition described above, and used in this thesis, represents the European perspective, whereas the North American approach differs in its emphasis (Upadyaya & Salmela-Aro, 2013). The latter has often been defined in terms of students´ behavioural, emotional and cognitive engagement. Behavioural engagement has to do with school attendance and time spent on school related activities. Emotional engagement on the other hand captures factors like students´ interest and attitudes towards studying and feelings of happiness or anxiety that stem from their school work. Finally, cognitive engagement is defined as including things such as psychological investments in learning, different learning strategies and self-regulation. (Fredricks, Blumenfeld & Paris, 2004.) While the North American approach is broader in scope addressing students´ actual attendance, emotional and cognitive engagement share similarities with the approach used in this thesis in that feelings of interest, happiness, positive attitudes and willingness to learn are also at the core of the European approach.

Whether it comes to work (Hakanen, Bakker & Schaufeli, 2006; Bakker, Hakanen, Demerouti & Xanthopoulou, 2007) or educational contexts (Ouweneel, Le Blanc & Schaufeli, 2011; Salmela-Aro & Upadyaya, 2014), it has been shown that both sufficient personal and social resources are an essential prerequisite for experiencing engagement. According to the Job Demands-Resources model (Demerouti, Bakker, Nachreiner & Schaufeli, 2001), which is described more thoroughly in the next chapter, engagement is a consequence of increased motivation stemming from high perceived

resources. This motivation can be either intrinsic, when resources support individual growth, learning and development, or extrinsic when resources are used as means to achieve performance goals (Bakker & Demerouti, 2007). More specifically, longitudinal research has shown that the relationship between different resources and engagement is reciprocal (Xanthopoulou, Bakker, Demerouti & Schaufeli, 2009). This means that as plentiful resources foster engagement in work or studies, this increased engagement in turn further increases the available resources in the future. The term positive gain spiral has been used to capture the reciprocal nature of resources and engagement (Salanova, Schaufeli, Xanthopoulou & Bakker, 2010b). When students feel that they are in control and succeed in their studies, their performance increases which in turn further confirms the initial efficacy beliefs.

Only a few studies have been conducted investigating the relationship of study engagement and students´ academic performance. Schaufeli et al. (2002) found a positive relationship between students´ engagement and their performance measured by passed exams across three countries. The authors point out however, that the causal direction cannot be explained without longitudinal studies. One attempt to track the development of this relationship has been done using a diary approach (Bakker, Vergel & Kuntze, 2015). It was shown that sufficient personal and social resources increased students´ engagement, which in turn led to more active learning and better performance. In their study, Salanova et al. (2010a) studied university students finding the best predictor of future performance to be the past performance and this relationship was mediated by study engagement. These results are consistent with the idea of positive gain spirals as high performance in the past makes students feel more engaged, leading to future improvements in performance.

2.3 The Job Demands-Resources model

In the previous chapter we looked at the definitions of studying related burnout and engagement and factors related to them. However, a framework is needed in order to more thoroughly understand the mechanisms through which they develop. The Job Demands-Resources model (JD-R) has been widely used in organizational research since it was initially developed (Demerouti et al., 2001; Bakker & Demerouti, 2007; Schaufeli & Taris, 2014). The model proposes that working and studying includes two kinds of fac-

tors that are related to the potential risk of stress: demands and resources (Bakker & Demerouti, 2007). The core idea behind the model is that when people face high demands, they have to exert extra effort to prevent decreases in performance or attainment of meaningful goals. This increase in efforts can be both physically and psychologically costly and without sufficient recovery, it may lead to exhaustion. (Schaufeli & Taris, 2014.)

Demands can be broadly defined as physical, psychological, social or organizational factors related to one´s work that require physical, cognitive or emotional effort and skills and which are associated with costs in these areas of functioning (Demerouti et al., 2001; Bakker & Demerouti, 2007). They can be related to the working context itself such as interpersonal conflicts or performance demands, stem from within the person like emotional dissonance, or be a combination of these such as role ambiguity (Xanthopoulou, Bakker, Demerouti & Schaufeli, 2007; Schaufeli & Taris, 2014). Demands should not be viewed as negative by nature. It is essential to consider how much effort an individual has to make to meet these demands and whether recovery is sufficient. One way to look at the different effects of demands is to consider how they are appraised. In their meta-analysis, Crawford, LePine and Rich (2010) presented an extension to the JD-R model by suggesting that the effects of different demands largely depend on how they are appraised, specifically whether they are perceived as hindrances or challenges. Demands seen as challenges have been found to have a positive relationship with engagement (Crawford et al., 2010; Van den Broek, De Cuyper, De Witte & Vansteenkiste, 2010). The role of appraisals on the effects of different potentially stressful situations is also more generally recognized in stress literature (Lazarus & Folkman, 1984).

Resources can be defined as all of the positive aspects of work that may either be functional in achieving goals by reducing job demands and the costs associated with them or stimulating personal growth and development (Schaufeli, Shimazu, Hakanen, Salanova & De Witte, 2017). In other words, they can be valued both intrinsically and for more instrumental reasons (Hobfoll, 2002). Just like demands, they can also be classified as workplace related- and personal resources. Resources originating from the organizational context can include social support from a supervisor or colleagues, whereas optimism and self-efficacy are examples of personal resources (Schaufeli & Taris, 2014).

Resources can be seen to work as a buffer, protecting an individual from the harmful effects of excessive work demands (Bakker, Demerouti & Euwema, 2005).

Compared to some of the earlier models of occupational stress such as the Demand-Control model (Karasek, 1979) or the Effort-Reward Imbalance model (Siegrist, 1996) JD-R can be seen as more versatile when applied to various contexts as its predictor variables are not as restricted (Bakker & Demerouti, 2007; Schaufeli & Taris, 2014). JD-R model has been most widely used in organizational research. However, because of its contextual flexibility, it has also been used in studies conducted on studying related burnout and engagement (Salmela-Aro & Upadyaya, 2014; Salmela-Aro, Moeller, Schneider, Spicer & Lavonen, 2016; Salmela-Aro & Read, 2017). Thus, the model provides a plausible theoretical framework for investigating how social support, guidance and counselling from the educational institution and sense of belonging to studying related groups can act as valuable resources associated with feelings of burnout and engagement.

The JD-R model proposes two fairly independent pathways through which demands and resources primarily affect burnout and engagement, which then ultimately lead to either positive or negative consequences. The first one is called the health impairment process that describes how excessive job demands first lead to decrease in mental and physical resources depleting energy and finally lead to health problems. The second process is the motivational process which explains the positive consequences of sufficient resources on engagement and performance. (Bakker & Demerouti, 2007.) These processes and the relationships between different elements of the model are presented in Figure 2.

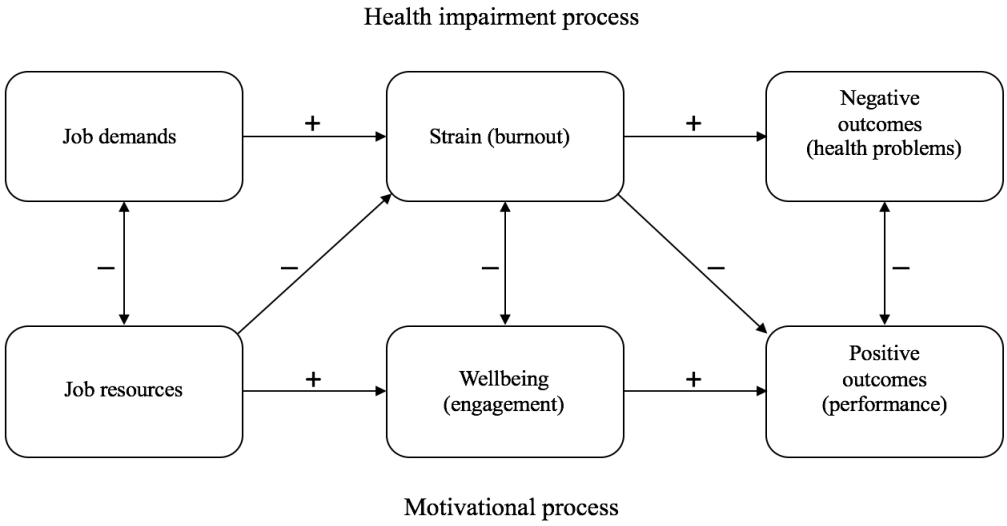

Figure 2. The revised JD-R model (Schaufeli & Taris, 2014).

2.4 Social support and guidance

Whether it comes to education, work or any other aspect of our lives, having people around to provide support and understanding is essential for our functioning. Baumeister and Leary (1995) have presented the "need to belong" as fundamental for human motivation. People try to form and maintain meaningful, positive and lasting relationships with others and the lack of such bonds will lead to different negative consequences. In the same vein, Deci and Ryan´s (2000) Self Determination Theory views the "need for relatedness" as one of three innate psychological needs essential for psychological growth and maintaining wellbeing. These basic principles behind human functioning are clearly evident in studying as well.

The term social support has been used to describe various different relationships and interactions between people. In everyday language it can be understood as almost anything between comforting a friend and formally organized groups providing support on a specific issue. Likewise, the definitions in social support literature have had different emphases. Cobb (1976) defined social support as information that leads people to believe that they are loved, cared for and esteemed and that they are members of a network of mutual obligations. In addition to this fairly broad definition, it has also been

acknowledged that social support has different functions. House (1981) has divided support functions into emotional, informational, appraisal and instrumental support. Emotional support has to do with receiving empathy and comforting. Informational support means receiving information that can help the individual to solve problems at hand. Appraisal support means evaluative information received on one´s performance. Instrumental support can be different tangible aids received such as money or other means of directly helping to achieve important goals. In addition to these different functions, it is important to take the different sources of support into account (Tao, Dong, Pratt, Hunsberger & Pancer, 2000; Malecki & Demaray, 2003). Students can receive support from many different sources including their family, friends both in and outside of their school and the teaching staff of the educational institution. It is also important to notice that the benefits of social support not only follow after actually receiving support, as it has been suggested that merely belonging to a supportive network can have stress reducing effects (Cohen & Wills, 1985). Just the perception alone that supportive resources would be available if needed is in itself comforting (Taylor, 2011).

2.4.1 Students´ wellbeing and motivation

Social support has been shown to have beneficial effects in educational contexts. Firstly, it has been shown to help students to better adjust to demands of higher education. Wilcox, Winn and Fyvie-Gauld (2005) interviewed British university freshmen about their experiences of adapting to their new education. One of the three major themes that emerged throughout all the interviews was social support. Those who had dropped out of university raised the lack of support as an important factor. Support received from friends and peers has been shown to be associated with both students´ personal-emotional and social adjustment to university and their general mental health (Friedlander, Reid, Shupak & Cribbie, 2007; Whiteman, Barry, Mroczek & MacDermid Wadsworth, 2013). Support received from friends can foster a sense of "mattering" or feeling that others depend on us, are interested in us and are concerned with our life. This feeling of importance in the eyes of other people can have a significant effect on academic stress (Rayle & Chung, 2007).

The teaching staff of educational institutions are also important sources of support. Sevinc and Gizir (2014) interviewed first-year university students about their sense of

adjustment to university and many of the interviewees highlighted the importance of the relationships with faculty and teaching quality provided by the faculty. Shen, Li, Sun and Rukavina (2010) found teacher provided support to be associated with high school students´ motivation. More specifically, lack of support regarding the three fundamental needs of autonomy, competence and relatedness (Deci & Ryan, 2000) was related to amotivation towards studying. Students who have stronger support networks might also be better adjusted to different challenges they face as their coping strategies for managing stress are more adaptive (Tao et al., 2000; Alarcon, Edwards & Menke, 2011) and they are more resilient in the face of stressors (Pidgeon, Rowe, Stapleton, Magyar & Lo, 2014). When students are well adjusted, motivated towards their studies and more capable of coping with stress, they are more satisfied in general. Social support has been shown to also play a role in studying satisfaction (Pluut, Curseu & Ilies, 2015) and while being satisfied has intrinsic value, it also positively affects students´ academic performance (Coton, Dollard & De Jonge, 2002).

2.4.2 Burnout

Some studies also exist in the literature focusing more specifically on how social support is related to students´ burnout. Recent meta-analysis by Kim, Jee, Lee, An and Lee (2018) shed light on recent research on the relationship between social support and studying related burnout and the results showed a general negative relationship between them. According to some research on university students, the relationship seems to be strongest when support is from the educational institution or a teacher. For example, Adie and Wakefield (2011) found teachers´ support aimed to foster students´ autonomy to have a negative relationship with burnout dimensions of cynicism and reduced efficacy. Results from a study on the effects of Finnish university students´ teaching-learning environments also revealed negative relationships between higher pedagogical quality of teaching and burnout (Meriläinen & Kuittinen, 2014). In a sample of doctoral students, support from their advisor predicted lower levels of burnout, whereas no such effect could be established between informal support from family or friends (Kovach Clark, Murdock & Koetting, 2009).

Other studies with student samples have found significant relationships also with informal support received from friends and family. Olwage and Mostert (2014) found paren-

tal support to be negatively related to exhaustion and cynicism components of burnout. Polman, Borkoles and Nicholls (2010) found no evidence for a significant effect of support from parents, although their result suggested a moderate association between support received from friends and burnout. Furthermore, Jacobs and Dodd (2003) found support from friends to have the strongest negative association with burnout. Another study conducted among medical students found significant associations for support from wide range of sources including faculty, friends, family and classmates (Boudreau, Santen, Hemphill & Dobson, 2004). In addition to direct effects, lack of social support can manifest itself in general feelings of loneliness, which has also been found to be a predictor of burnout symptoms in students (Lin & Huang, 2012).

Taken together, these somewhat mixed results highlight the important finding that what could be even more important than the source of support per se, is that the source matches the particular demands of the situation (Rosen & Moghadam, 1990; Peeters & Le Blanc, 2001). Support received from friends or other peers might be qualitatively different as it comes from someone possibly more similar to the person receiving the support (Kim et al., 2018). For example, support received from friends or other close people is often different from more formal support from the faculty staff.

2.4.3 Engagement

The relationship between support and engagement in higher education has not received as much attention as burnout. However, some research exists investigating these associations. Bakker et al. (2015) utilized a diary approach to see how weekly changes in different studying resources predicted learning activity. They found out that studying resources including support from other students, family and friends predicted more active learning through increased engagement. In a similar way, Salanova et al. (2010a) studied different studying related facilitators such as support from friends and family or feedback from teachers and colleagues and found them to be associated with higher engagement, which then in turn contributed to future performance. When it comes to support received from teaching staff, attempts to increase students´ autonomy has been shown to be related to the dedication component of engagement (Adie & Wakefield, 2011). In addition to these direct effects, social support has also been found to have an indirect effect on engagement through the use of more adaptive, problem focused cop-

ing strategies (Alarcon et al., 2011). Social strategies during the years of studies might also have longer term effects for burnout and engagement. In their longitudinal study over 18 years, Salmela-Aro, Tolvanen and Nurmi (2011) found early career burnout levels to be lower for those who had higher social optimism and less social withdrawal and handicapping. The opposite was true for early career work engagement as those with better social strategies over their studying years showed more engagement in their work. Research conducted on work engagement in organizational settings also provide evidence for the important role of social support (Christian, Garza & Slaughter, 2011).

2.5 Sense of belonging

In addition to receiving actual support from close friends and other people in the academic environment, a feeling of belonging to different groups within the studying community itself provides an important resource that might buffer from harmful effects of demands and promote dedication towards studies. As already noted in the previous chapter, the need to belong and relate to others (Baumeister & Leary, 1995; Deci & Ryan, 2000) is a strong motivational factor behind human functioning. When students enrol in their studies, they become part of the educational institution and its various different groups. The first weeks are usually packed with activities organized in groups led by tutors, which then begins the formation of different subgroups based on the same starting year, major subjects or faculties. Often plenty of information is also given about different extracurricular activities including sports groups, other hobby groups or studying groups. The list of different possible groups for students is endless, but all of them may contribute to providing meaning and sense of togetherness. Within student contexts, research has used different terms to study how this sense of being part of different groups affects students´ wellbeing and adaptation to their academic life.

Many studies have used the term sense of belonging to capture students´ feelings of being part of their educational environments. While these studies conducted in higher education context have rarely focused on engagement or burnout as target variables, they still provide support for relationships with various other wellbeing constructs. In one study using a slightly different definition of engagement, students´ sense of belonging was found to affect teacher rated engagement with academic activities through self-efficacy and task value (Zumbrunn, McKim, Buhs & Hawley, 2014). Other studies have

shown connectedness to university to be related with students´ higher perceived sense of academic competence and self-worth and less internalized symptoms such as depression and anxiety (Pittman & Richmond, 2007; 2008), all of which are conceptually related to both burnout and engagement. This link between students´ sense of belonging and motivational outcomes including higher intrinsic motivation, academic self-efficacy and achievement goals has also gained support in other studies (Freeman, Anderman & Jensen, 2007; Won, Wolters & Mueller, 2018).

More generally, it has been shown that identifying with social groups strengthens feelings of personal control (Greenaway, Haslam, Cruwys, Branscombe, Ysseldyk & Heldreth, 2015). Out of all the different social groups in students´ environments, identification with university friend groups seems to have an especially important role in protecting from psychological distress (McIntyre, Worsley, Corcoran, Harrison Woods & Bentall, 2018). Other research using the concept of campus connectedness has shown higher connectedness to be associated with higher resilience (Pidgeon, Rowe, Stapleton, Magyar & Lo, 2014), which in turn can protect students from burnout (Dunn, Iglewicz & Moutier, 2008). Students´ sense of belonging has also been found to be a significant predictor of intentions to persist in studies and commitment to the educational institution (Hausmann, Schofield and Woods (2007).

3 RESEARCH QUESTIONS AND HYPOTHESES

This thesis aims to investigate factors related to wellbeing of higher education students by addressing the research questions of how different social resources, namely support from close people, guidance and counselling received from the place of education and sense of belonging to studying related groups are associated with both burnout and engagement experienced by higher education students.

Based on the literature review of existing research it can be concluded that the majority of both burnout and engagement research has been conducted in different organizational settings, while less research has been done with student populations. Moreover, when looking at wellbeing research conducted on students, it rarely focuses directly on the relationships between different forms of social resources with burnout and engagement. On the basis of the available literature presented and the JD-R model, all of the social resources are expected to be negatively related to burnout and positively related to study engagement and these assumptions form the two hypotheses of this thesis. Since research on the effects of different sources social support on burnout is inconclusive and in the case of engagement lacking all together, no assumptions are made regarding the relative strength between different sources of support. More specifically, this thesis aims to investigate the following two hypotheses:

H1 Informal social support, guidance and counselling by the educational institution and sense of belonging to studying groups are all negatively related to overall burnout in higher education.

H2 Informal social support, guidance and counselling by the educational institution and sense of belonging to studying groups are all positively related to overall engagement in higher education.

4 METHODS

4.1 Student Health Survey 2016

The Finnish Student Health Service has been conducting nationwide, cross-sectional Student Health Surveys for Finnish higher education students every four years since the year 2000. The goal of these surveys is to provide information about students´ physical, mental and social health and wide range of different factors related to students´ wellbeing. The first two surveys in 2000 and 2004 only included university students but in 2008, 2012 and 2016 the scope was broadened to also include students at universities of applied sciences. The data used in this thesis is the most recent Student Health Survey from 2016. (Kunttu et al., 2017.) The data was acquired from the Finnish Social Science Data Archive for the purpose of this thesis (FSD).

The target population of the survey is Finnish higher education students between ages 18-35 currently studying in either Finnish academic universities or universities of applied sciences. The sample for academic university students was collected from the FSHS customer registers and the sample for students of universities of applied sciences was obtained from the institutions´ own student registers. In total, the whole sample included 10,000 Finnish students out of which 4,996 studied in academic universities and 5,004 in universities of applied sciences. The response rates were 39 % and 25 % respectively, overall response rate being 31 % (n=3110). In this most recent survey, the data was collected in completely digital format, except for one reminder that was mailed to the participants. There has been a small decrease in overall response rates for this survey over the years. However, non-response bias analyses have not revealed any accumulation of specific health problems among those who have not responded. Men were slightly underrepresented as their response rate was only 22.3 % compared to that of women being 38,6 %. (Kunttu et al., 2017.) Description of the participants can be seen in table 1. The study protocol and collection of the data has been approved by the Ethics Committee of University of Turku. All the students in the sample have given their informed consent by responding to the survey.

Table 1. Description of the participants.

	n	%
Gender		
Men	1068	34,6
Women	2022	65,4
Total	3090	
Age		
18-21	424	14,7
22-24	1069	37
25-27	768	26,6
28-30	368	11,9
31-33	201	7
33-	56	1,9
Type of higher education		
Academic university	1850	59,9
University of applied sciences	1240	40,1
Stage of studies		
Less than 3 years	2211	73,4
3-6 years	683	22,7
More than 6 years	118	3,9

4.2 Measures and variables

4.2.1 Study Burnout Indicator

Burnout experienced by students was measured using the Study Burnout Indicator (SBI-9), which is a scale for measuring and recognizing burnout and its different forms among higher education students (Salmela-Aro, 2009). This scale has been developed based on existing variants of the Bergen Burnout Indicator, including BBI-10 school burnout inventory and BBI-15 for burnout in working context (Salmela-Aro, Kiuru, Leskinen & Nurmi, 2009). The measure consists of three subscales for burnout: exhaustion, cynicism and inadequacy. Exhaustion is measured with three questions such as *"I feel overwhelmed by the work related to my studies"* or *"I brood over matters related to my studies a lot during my free time"*. Cynicism is measured with three items like: *"I feel a lack of motivation in my studies and often think of giving up.* Inadequacy subscale includes the following two items: *"I often have feelings of inadequacy in my studies"* and *"I used to have higher expectations of my studies than I do now"*. All the questions

are answered using a six-step Likert-type scale where 1 represents complete disagreement and 6 means complete agreement with the statement. (Salmela-Aro, 2009.)

The score for overall burnout level was formed by adding up all the responses to individual questions and dividing by the total number of questions. This method only includes those respondents who have answered all the questions, thus making the mean score more accurate. While this method inevitably means losing some observations, the size of the data makes this less problematic. Before computing the mean score, the internal consistency of the scale in this data was confirmed using Cronbach´s Alpha value. The scale proved to be reliable with an alpha value of 0.88. This was expected, since FSHS Student Health Survey 2008 has been used as the normative data in creating the SBI-9 **(**Salmela-Aro, 2009**)**. The scale can be seen in Appendix 1.

4.2.2 Schoolwork Engagement Scale

Study engagement was measured using the Schoolwork Engagement Scale (Salmela-Aro, 2009). This 9-item scale is translated and adapted from the Utrecht Work Engagement Scale (UWES) for students (Schaufeli et al., 2002). Schoolwork Engagement Scale has three subscales: vigour, dedication and absorption. Vigour component is measured with questions like: *"When I am studying, I feel I am bursting with energy"* or *"I feel strong and vigorous when I am studying"*. Dedication includes items like: *"I find my studies full of meaning and purpose"* or *"My studies inspire me"*. Absorption is measured with questions such as: *"Time flies when I am studying"* or *"When I am studying, I forget everything else around me"*. The scale uses a Likert-type scale with six steps ranging from complete disagreement (1) to complete agreement (6). The total engagement score was also formed by adding up the individual scores and dividing it by the amount of questions, requiring answers to all of the questions. The total engagement measure showed high reliability with Cronbach´s Alpha value of 0.94. This scale can be seen in Appendix 1.

An exploratory factor analysis was conducted on both SBI-9 and Schoolwork Engagement Scale to see how well the individual questions loaded into two underlying factors of burnout and engagement. Maximum likelihood method was used to extract two factors from all of the variables in these measures. As these concepts have been shown to

be correlated with each other, Direct Oblimin was chosen as the rotation method to make the factor solution easier to interpret. The results suggested that the data was well suited for factor analysis (KMO=.944 and Bartlett´s test $p<0.001$). All of the variables used in the Schoolwork Engagement Scale loaded mainly on the second factor without any significant loadings on the first factor. However, while the majority of the variables of SBI-9 loaded onto the first factor, some of the variables showed significant loadings also on the second factor. More specifically, the statements "*I feel a lack of motivation in my studies and often think of giving up*" and "*I feel that I am losing interest in my studies*" loaded almost as strongly, but negatively to F2. Regardless of this, all of the variables were decided to be kept in as these scales have been used with all the variables in prior studies. The full results of the factor analysis can be seen in Appendix 2.

Additionally, appendices 3 and 4 show the results of exploratory factor analyses for both scales individually with their three subscales. The results indicated that the three factor solution could not be completely established in this data as some variables unexpectedly loaded on factors with other subcomponents. Some previous research has also revealed inconsistencies in their support for the assumed three factor solution in measuring burnout and engagement (e.g. Schaufeli, Bakker & Salanova, 2006). As both SBI-9 and Schoolwork Engagement Scales have been developed to be used both using the subscales and total scores, the latter method was chosen for this thesis.

4.2.3 Social resources

Informal social support was assessed by combining the question "*Can you openly discuss your matters and problems with someone close to you, if you wish so?*" and the statement "*Over the last week I have felt I have someone to turn to for support when needed*". Both of the questions were measured with a 5-point scale ranging from 0 (never) to 4 (always or almost always). The scores on these two variables were added up and divided by two, meaning that it was required for respondents to answer both of the questions for inclusion. Spearman-Brown coefficient was used for checking the reliability of this two-item scale since it has been suggested to be more suitable for two-variable solutions than Cronbach´s Alpha (Eisinga, Te Grotenhuis & Pelzer, 2013). The correlation coefficient for these items was .516 indicating acceptable reliability.

Students´ experiences of counselling and support from the educational institution was measured by asking *"How has the study guidance and counselling given by your university been over the past year (12 months)?"*. The respondents were able to answer this on a 5-point scale from 0 (totally inadequate) to 4 (very good).

Finally, sense of belonging to different groups was measured with the question *"Do you feel that you belong to any study-related group (e.g., class, department, thesis group, subject association, etc.?"*. This question could be answered simply by "yes", "no" or "I don´t know". In the analyses "I don´t know" –responses were omitted in order to make the variable dichotomous for using it in the same regression models with other support variables.

4.3 Analyses

Before the actual analyses for testing the hypotheses, it was important to see how well the data conforms to various assumptions that need to be met in order to make valid conclusions about the results of linear regressions. After addressing these assumptions, the second step was to get an overview of the strength and direction of possible relationships by looking at the correlations between all of the variables. Hierarchical linear regression analysis was used to test the hypotheses H1 and H2 stating that social support, guidance for studies and sense of belonging are negatively related to overall levels of burnout and positively related to engagement reported by higher education students. The use of linear regression models makes it possible to observe these relationships while other factors are controlled for. The analyses were conducted in IBM SPSS (v.25).

4.3.1 Assumptions for linear regression analysis

There are some assumptions that should be considered before using linear regression to model relationships between the predictors and target variables. First, the relationships between the variables should be linear for these models to be accurate. This assumption was tested by observing scatter plots of the scores drawn in SPSS, where linear relationships were visible after adding random motion through jittering. Linearity of the relationships was also confirmed by creating scatter plots where predicted scores of the

model were plotted against the residuals. These plots showed no apparent curvature, thus indicating linearity. Observing the spread of the residuals is also important for checking the assumption for homoscedasticity, which means that this spread of residuals should be similar regardless of the predictor variable´s level. This is important because forming the linear model is based on these residuals (Nummenmaa, 2011 p.310).

Next, it was made sure that no multicollinearity was present in the chosen predictors. Multicollinearity means that predictor variables are too strongly related and thus share some of the explained variance in the target variable. This can cause problems when interpreting the individual effects of different predictors (Nummenmaa, 2011 p.316). Variance inflation factors (VIF) were checked in order to rule out this problem. In a scenario where no multicollinearity is present the VIF score is 1. VIF values for the predictors used fell between 1.022 – 1.058 showing only a slight deviation from this level. Finally, the assumption of normality was assessed by examining the graphical presentations of variables´ distributions using probability-probability (P-P) plots. These plots allow comparing probability of different variables´ values against chosen distribution, which was chosen to be normal in this case (Field, 2013 p.180). The P-P plots revealed that the scores for engagement best conformed normal distribution while burnout and social support scores slightly deviated from the line representing normality. However, as sample sizes get bigger, this deviation becomes less problematic (Field, 2013 p.170).

4.3.2 Descriptive statistics and correlations

Before conducting any analyses, descriptive statistics were obtained to get a clear picture of distributions of all the variables used. On the question about sense of belonging to student groups (N=2714), 71 % of students reported feeling like part of different groups. Out of all the participants who had reported their gender (N=3090) 65,4 % were women. Looking at the stage of studies (N=3031), 73,4 % had studied for 1-3 years and the rest for over three years. Finally, regarding feeling of being in the right field of study (N=2402), 81,4 % felt like their studied were right for them and 18,6 % did not. The descriptive statistics for all of the continuous variables are presented in table 2.

Table 2. Descriptive statistics for continuous variables used in the analyses.

	Mean	Standard Deviation	Min-Max	Skewness	Kurtosis	N
Burnout	2,61	1,09	1.00 – 6.00	.58	-.23	2941
Engagement	3,36	1,02	1.00 – 6.00	-.07	-.23	2920
Social support	3,14	.87	0.00 – 4.00	-1.09	.68	3024
Guidance and counselling	1,96	1,03	0.00 – 4.00	-.12	-.76	2671

Bivariate correlations between all of the used variables and measures were observed using Pearson's correlation coefficients with two-tailed significance tests. The results are shown in table 3. First of all, it can be seen that all of the social resources had statistically significant relationships with both burnout and engagement. Guidance and counselling had the strongest negative relationship with burnout (r = -.30) and strongest positive relationship with engagement (r = .26). Social support had the second strongest negative relationship with burnout (r = -.26) followed by sense of belonging (r = -.18). However, the opposite was true for engagement with sense of belonging showing stronger positive association (r = .26) compared to social support (r = .18). As expected, burnout and engagement had a considerable negative correlation (r = -.45). All of the observed correlations were significant, but it should be noted that having a sample size this big increases the chances of getting statistically significant results.

These results indicate preliminary support for the hypotheses of negative associations between all of the predictors and burnout and positive associations with engagement. However, as these correlations only reveal information about the bivariate relationships in isolation of all of the other variables, more thorough analyses are needed to get a more accurate picture of these relationships. Looking at the correlations between the so-

cial resource variables, all of them fall between r = .11 and r = .21, indicating only moderate relationships. This further supports that no multicollinearity is present that would interfere with interpreting the results.

Table 3. Correlations between social resources, burnout, engagement and (N=2187)

	1	2	3	4	5
1 Social support	1				
2 Guidance and counselling	.11**	1			
3 Sense of belonging	.21**	.12**	1		
4 Burnout	-.26**	-.30**	-.24**	1	
5 Engagement	.18**	.26**	.26**	-.45**	1

**Correlation is statistically significant at p<.01, two-tailed, Listwise.

4.3.3 Hierarchical multiple regression

Linear regression makes it possible to analyse relationships between different predictor and target variables and make predictions of the values of different phenomena. It is fairly flexible and allows using as many predictors as needed to make these predictions. When it comes to testing the two hypotheses of this thesis, two hierarchical multiple regression models were used to find out whether social support, guidance and counselling and belonging to student groups could be used to explain total scores in both burnout and engagement reported by students. While it would have been possible to form six simple regression models to map these relationships individually, hierarchical regression models reveal the strength of these relationships when the effect of other predictors

have been taken into account. Additionally, this approach allows to control for different background variables that might influence the relationships.

Predictor variables can be entered into the regression models using different methods. The method used in the analyses was “Enter” in SPSS, which allows to manually select the order in which different variables are included in the model. The analyses for both burnout and engagement as target variables followed the same procedure. In the first step, three variables were inserted to be statistically controlled for. First one being inserted was the stage of studies, which was made dichotomous (1-3 years coded as 0 and 3 or more years coded as 1) from the original three class variable. Earlier studies have shown the stage of studies to be related to both burnout and engagement (Salmela-Aro & Read, 2017). Next control variables were gender (women coded as 1) and feeling of being in the right study field (right field of study coded as 1). Out of the social resources, belonging to student groups was added first, followed by guidance and counselling. These two were selected first as they directly relate to the educational environment. This allows observing the effects of more general social support when factors related to education have been taken into account.

5 RESULTS

5.1 Regression analysis with burnout

Results of the hierarchical regression analysis of social support, guidance and counselling and sense of belonging on burnout can be seen in table 4. In the first step, the control variables alone were all statistically significant predictors of burnout (F (3,2017) = 35.05, $p<.001$) and accounted for 5 % of the variance in total burnout scores. Both the stage of studies ($\beta = .04$, $p<.05$) and gender ($\beta = .09$, $p<.001$) were positively related to burnout, although the strength of these relationships was small. These variables were coded using 1 for longer duration of studies and 1 for women. This means that the positive associations indicate higher burnout scores for women and those that have studied for a longer time. Being in the right field of study was negatively related to symptoms of burnout ($\beta = -.19$, $p<.001$). After the predictors were introduced to the model in subsequent steps, the association between the stage of studies and burnout was no longer statistically significant. The other two control variables continued to significantly predict burnout throughout the steps with the strength of right studying field showing steady decline after the predictors were added.

Adding sense of belonging to the model as the first actual predictor statistically significantly increased the explanatory power of the model by 1.2 % (F (4,2016) = 32.98, $p<.001$) and it was negatively related with burnout ($\beta = -.12$, $p<.001$). In the third step, adding guidance and counselling in the model increased the amount of variance explained by additional 6.8 % (F (5,2015) = 59.98, $p<.001$) and guidance negatively predicted burnout scores ($\beta = -.27$, $p<.001$). Finally, social support was also negatively associated with burnout ($\beta = -.20$, $p<.001$) and increased the explanatory power of the model by additional 3.7 %, (F (6,2014) = 66.99, $p<.001$). In total, all of the variables included in the model accounted for 16.6 % of the variance in burnout scores reported by students. Taken together these results provide support for H1 as the more social resources students experienced, the lower their overall reported burnout scores were.

Table 4. Relationships between social resources and burnout (N=3090)

Variable	B	*SE B*	β
Model 1			
Stage of studies	.11	.05	.04*
Gender	.20	.05	.09***
Right field of study	-.54	.06	-.19***
R^2 = .050			
Model 2			
Stage of studies	.08	.05	.03
Gender	.21	.05	.09***
Right field of study	-.41	.07	-.15***
Sense of belonging	-.29	.06	-.12***
R^2 = .061			
Δ R^2 = .012***			
Model 3			
Stage of studies	.07	.05	.03
Gender	.16	.05	.07***
Right field of study	-.29	.06	-.11***
Sense of belonging	-.25	.06	-.11***
Guidance and counselling	-.28	.02	-.27***
R^2 = .130			
Δ R^2 = .068***			
Model 4			
Stage of studies	.05	.05	.02
Gender	.24	.05	.11***
Right field of study	-.22	.06	-.08***
Sense of belonging	-.19	.05	-.08***
Guidance and counselling	-.26	.02	-.25***
Social support	-.25	.03	-.20***
R^2 = .166			
Δ R^2 = .037***			

***p<0.001, *p<0.05

5.2 Regression analysis with engagement

Results of the second hierarchical multiple regression for the relationships between the predictor variables and engagement can be seen in Table 5. The results show that the control variables introduced in the first step only accounted for 3 % of the variance in total engagement scores, ($F(3,2017) = 20.93$, $p<.001$). Being in the right studying field ($\beta = .15$, $p<.001$) and gender ($\beta = .06$, $p<.01$) were both positively related to engagement. With the coding used for these variables, this indicated higher engagement scores for women and those who felt they were studying the right subject for them. The strength of the relationship between right field of study and engagement decreased when the social resources were added to the model. The stage of studies was negatively related to engagement ($\beta = -.06$, $p<.05$) suggesting that those who had studied longer experienced less engagement. This association steadily decreased in strength as the main predictors were introduced and it was no longer statistically significant after adding social support in the final step.

After the controls, sense of belonging was added in the second step and it increased the explanatory power of the model by 1.3 %, ($F(4,2016) = 22.75$, $p<.001$) and was positively related with engagement ($\beta = .13$, $p<.001$). The next step introduced guidance and counselling, which increased the amount of variance explained by the model by an additional 6.1 % ($F(5,2015) = 46.65$, $p<.001$) and positively predicted engagement scores ($\beta = .25$, $p<.001$). Social support was added in the last step and it was also positively associated with engagement ($\beta = .08$, $p<.001$), although adding the variable only increased the amount explained by an additional 0,6 %, ($F(6,2014) = 41.43$, $p<.001$). Overall, adding all of the predictors in the regression managed to explain 11 % of the variance in total engagement scores. These results provide support for H2 as higher scores in social resources predict higher overall engagement scores for students in this sample.

Table 5. Relationships between the predictors and engagement (N= 3090)

Variable	B	*SE B*	β
Model 1			
Stage of studies	-.13	.05	-.06*
Gender	.13	.05	.06**
Right field of study	.38	.06	.15***
R^2 = .030			
Model 2			
Stage of studies	-.11	.05	-.05*
Gender	.12	.05	.06**
Right field of study	.26	.06	.10***
Sense of belonging	.28	.05	.13***
R^2 = .043			
ΔR^2 = .013***			
Model 3			
Stage of studies	-.10	.05	-.04*
Gender	.16	.05	.08***
Right field of study	.16	.06	.06**
Sense of belonging	.25	.05	.11***
Guidance and counselling	.25	.02	.25***
R^2 = .104			
ΔR^2 = .061***			
Model 4			
Stage of studies	-.09	.05	-.04
Gender	.13	.05	.06**
Right field of study	.13	.06	.05*
Sense of belonging	.23	.05	.10***
Guidance and counselling	.24	.02	.24***
Social support	.10	.03	.08***
R^2 = .110			
ΔR^2 = .006***			

***p<0.001, **p<0.01, *p<0.05

6 DISCUSSION

The goal of this thesis was to investigate how different social resources, namely social support from close people, guidance and counselling from one´s educational institution and sense of belonging to studying related groups are associated with overall burnout and engagement levels in higher education. Based on both the Job Demands-Resources model (Bakker & Demerouti, 2007) and existing research conducted in higher education contexts, it was hypothesized that these resources are negatively related to burnout and positively related to engagement. The results supported these hypotheses and are further discussed in the following chapter. After looking at these results, the strengths of this study are discussed followed by the limitations that are considered together with some suggestions for future research to overcome them.

Interpreting the results and reflecting them on earlier studies

Both hypotheses were supported as all of the social resources were found to be significantly related to burnout and engagement among higher education students. Regardless of whether these resources meant being able to discuss matters and problems with someone, having more formal guidance and counselling from the staff of the place of education or feeling belongingness to studying related groups, those students who perceived more available resources, showed less signs of burnout. The same was true when it came to experiencing engagement. Students who experienced sufficient resources also felt more vigorous, dedicated and absorbed in their studies. Taken together, the findings are consistent with the JD-R model through which these three kinds of social resources can be seen to protect students against the ill effects of demands (health impairment process) of education but also fostering motivation and stimulating personal growth (motivational process) (Bakker & Demerouti, 2007).

The negative associations of social support and guidance with burnout are in line with existing literature conducted with higher education student samples. A recent meta-analysis reported a consistent negative relationship between social support and burnout, which was also clearly shown in the findings of this thesis (Kim et al., 2018). Further elaborating the results requires comparing the used measures in this thesis to those in previous studies. Closer look at social support literature reveals that the measures used have varied significantly, which makes direct comparisons difficult. Evidence has been

shown for friends, peers or family as an important source of support (e.g. Polman et al., 2010) and support received from the educational staff has also been found to negatively predict burnout (e.g. Kovach et al., 2009; Adie & Wakefield, 2011). Research findings have been generally mixed about which of these variables is more significant predictor of burnout. The results of this thesis suggest that guidance and counselling could explain slightly more variance in burnout scores compared to informal social support. While the way guidance and counselling was measured more closely matches the measures used in existing research, it should be noted that the wording of the informal social support measure in this thesis does not explicitly state the source of support, but uses either the word "*someone*" or "*someone close to you"*. While it can be assumed that for many people someone close would mean people among friends or family, accurate comparisons with previous studies are difficult. Thus, it can only be concluded that having someone to talk to about problems and other important matters, regardless of the source, is important in protecting students from being drained out of energy and developing cynical attitudes towards studying.

The results also revealed that in addition to having lower scores on the measure of burnout symptoms, those students whose social resources were more sufficient, were also more engaged in their studies. While research on the associations of social support, guidance and engagement in student samples is really limited, the results obtained in this study are consistent with those that exist. For example, weekly changes in students´ resources including support from other students, family and friends has been shown to be related to consecutive changes in their engagement (Bakker et al., 2015). Additionally, a study by Adie and Wakefield (2011) suggested that autonomy support was related to higher dedication of students, which is one of the main components of engagement. Both support from friends and family and teacher provided feedback was shown to be associated with higher engagement in a study by Salanova et al. (2010a). In addition to the few studies conducted in higher education contexts, the results obtained were also expected on the basis of vast research conducted in different organizational settings, which provide evidence for the importance of social resources for work engagement (e.g. Crawford et al., 2010).

An interesting finding was that while guidance received from the educational institution had equally strong relationships with both burnout and engagement, the association of

informal support with engagement was, although significant, considerably weaker than with burnout. In other words, it seems that being able to vent own feelings and talk about matters and problems with close people is not as strong predictor of students´ engagement compared to burnout. These findings were somewhat unexpected given that no prior research has indicated such a difference. It should be noted however, that only a few studies exist targeting these variables together and thus robust evidence for the associations has not yet been accumulated. Future research using measures with different sources and types of support should further investigate these findings. The type of support could be especially valuable to target, as it may have a key role in explaining these results. For example, in the measure for social support used in this thesis, one of the two questions explicitly states "matters and problems" as the topic of support. It could be that this emphasis on discussing problems is causing this variable to be more strongly associated with burnout than engagement. It may be that other types of support with different focus, even from the same source, would be stronger predictor of engagement.

In addition to different forms of social support, the results also revealed significant associations of sense of belonging to studying related groups with both burnout and engagement. Students who perceived themselves as part of different groups such as their class, department or subject association experienced less signs of burnout and felt more engaged in their studies. Direct comparisons of these results with existing literature is not possible because of an absence of studies directly measuring sense of belonging in relation to burnout and engagement. Furthermore, those studies that have targeted different wellbeing outcomes may have used slightly different concepts of capturing belonging to studying environments. Nevertheless, the obtained results are in line with existing studies utilizing different conceptualizations. For example, studies by Pittman and Richmond (2007;2008) indicated that those students who felt more connected to their schools had higher perceived academic self-worth and competence but also less internalized symptoms such as depression or anxiety. While the outcomes used in these studies were different, they share similarities with both burnout and engagement, especially when it comes to academic self-worth. Additionally, sense of belonging has been linked to other aspects of students´ motivation such as academic self-efficacy and intrinsic motivation (Freeman et al., 2007; Won et al., 2018). As burnout or engagement have not been studied together with sense of belonging before, the present findings thus suggest

that this would be a valuable topic for further studies incorporating more refined measures of belonging or identification.

Overall, it is worth noting that while the expected significant relationships were found in this data, some of the effect sizes were rather small. This was particularly true in the case of informal social support with engagement. Adding this variable to the model only increased the explanatory power by a marginal amount which would unlikely have implications in the real world. While the bivariate correlations between social support and engagement showed a stronger association, after introducing the other variables, its independent contribution in explaining engagement dropped significantly. More generally, the models for burnout and engagement managed to explain the variance of these target variables by 16,6 % and 11 % respectively, which means that there are still many other factors at play. This finding is not surprising when reflected on the model of studying ability by Kunttu (2011), which clearly illustrates the multifaceted nature of student wellbeing. From this perspective, even if social resources leave much room for other possible variables they are still a vital piece in the puzzle.

The results do not warrant any conclusive evidence for why social resources are important in predicting burnout and engagement. However, research has shown that having sufficient support has a wide range of beneficial effects on students´ wellbeing. First of all, it has been shown to have a significant role in students´ overall adjustment to university (Friedlander et al., 2007). Interview studies have also revealed that higher education students perceive support from both friends and faculty to be important factors in their adjustment to studying life (Wilcox et al., 2005; Sevinc & Gizir, 2014). This is important as students face multiple different demands in their studies that can affect their wellbeing. While JD-R model suggests that demands generally lead to decreased wellbeing through the health impairment process, some studies suggest that there is an interplay between resources and demands. It has been shown that high demands can actually amplify the beneficial effects of resources on engagement (Bakker et al., 2007). In other words, it is specifically under demanding circumstances when sufficient resources such as social support can lead to positive outcomes in one´s studies.

When it comes to dealing with demands of education, research shows that those students who experience supportive networks around them tend to utilize more adaptive

coping strategies under stress (Tao et al, 2000; Alarcon et al., 2011). Thus, it is possible that while individual students can feel equally strong pressure from their studies, those whose social resources are higher not only have less negative effects on their wellbeing but can actually feel stronger sense of meaning in their studies because of the challenging environment. Research has shown that in addition to dealing with demands and stress of studies, social support is connected to students´ motivation (Shen et al., 2010) and their satisfaction towards studies (Pluut et al., 2015). While conceptually distinct, these factors are closely related to both burnout and engagement (cf. cynicism / dedication components) and can thus partly explain the obtained results.

When interpreting the findings, it should be noted that in the literature there are two proposed ways through which social support affects wellbeing. These are often referred to as the direct effect hypothesis and the buffering hypothesis of social support (Cohen & Wills, 1985). As the names imply, the direct effect hypothesis states that social support has beneficial effects on wellbeing regardless of the presence of stressors in one´s life. Buffer hypothesis on the other hand assumes social support to be beneficial mainly as a moderator between stressors and their consequences on wellbeing. Research has shown that social support can work through both of these ways (Taylor, 2011), but the present findings only provide evidence for direct effects. Studying any possible buffer effects requires taking specific demands into account and observing if their effects on burnout and engagement are moderated by different social resources. Research has shown that the most beneficial effects of social support are achieved when the particular demands of a given situation are matched with right kinds of support (Peeters & Le Blanc, 2001). Getting a clearer picture of what kind of support students need to cope with particular demands would have significant practical implications as this knowledge could help develop more supportive educational environments.

One way to theoretically approach the direct effects found is to utilize Self-Determination Theory by Deci and Ryan (2000). As noted in earlier chapters, studying in higher education can be considered as students´ work. It consists of multiple different goals which can be shorter-term such as successfully completing a course or longer-term such as eventually graduating with a degree. Through the lens of SDT, students´ pursuits towards these different valued goals are affected by fundamental human needs of competence, autonomy and relatedness and social resources can help fulfil these.

Having people around to talk to about different matters and feeling like being part of different groups first of all provides a sense of relatedness with others and possibility for close emotional bonds. Secondly, support received from others or being part of valued groups may also make students feel more competent. Finally, the need for autonomy might also be strengthened for example by receiving support from the educational staff (e.g. Adie & Wakefield, 2011). The fulfilment of these needs is important because they can be seen as psychological nutriments required to function well psychologically, socially and physically (Reeve, 2012).

Strengths of this study

While the amount of studies conducted on students´ wellbeing is increasing, research is still not as abundant as in different organizational settings. Additionally, many of those studies that have been done in educational contexts have targeted populations on lower levels. Thus, more research is needed to get a clearer picture of factors affecting higher education students´ wellbeing both negatively and positively. The concepts of burnout and engagement provide valuable tools to understand how students perceive the demanding but also rewarding nature of education. As these concepts are getting stronger foothold in educational research, more studies are needed to understand different factors related to them in this context. This thesis aims to help address this question and in doing so has some specific strengths.

The main contribution of this thesis lies in providing basic level understanding of some specific antecedents of concepts that have not been studied much in this context. While social support and its benefits for students have been studied before, less of this research has focused specifically on burnout and engagement as target variables. This is especially the case with engagement, as only a few studies have targeted these variables together. While it is argued that higher education studies are similar to work in many ways, it is still important to focus on studying factors related to burnout and engagement specifically in the context of interest. After all, there are some significant differences in working and studying contexts and thus the factors studied in the former do not always correspond to the other. One key difference is that while people working for an organization ultimately all work towards a shared goal of that organization, students´ goals are more individual as they educate themselves and provide the degree for themselves. For exam-

ple, in relation to burnout and engagement, to what extent is supervisory support in an organization comparable to guidance received from the school staff? Or how does co-worker support compare to support from peers and close friends? To answer these questions, basic level research is needed for clarifying the role of these resources in higher education.

Another thing that can be seen as a strength of this study is that besides revealing associations of social support from different sources, no previous research seems to have used group belonging as a predictor of burnout and engagement. The results of this thesis suggest that this could in fact be an important factor to consider and target in future research. Given the number of different groups around higher education institutions and all the different activities organized by them, it is important to study how the sense of community provided by these on one hand can protect from different demands but also foster motivation and sense of meaning in own studies.

In addition to the topic itself, the data and some of the measures used can be seen as an advantage of this study. Both SBI-9 and Schoolwork Engagement Scale together with their variants for burnout and work engagement in organizational research have been shown to be reliable and valid in multiple contexts and various countries (Schaufeli et al, 2002; Salmela-Aro, 2009; Schaufeli & Bakker, 2010). More generally, the data used has its strengths when it comes to generalizing the results. The Student Health Survey 2016 uses a sample of the whole higher education student population in Finland, which together with large amount of participants makes the results obtained generalizable. The sample includes students from both universities and universities of applied sciences across all geographical areas of Finland.

Limitations of this study

While the breadth of the data first and foremost should be seen as an advantage, there are also some downsides to it. The survey is conducted every four years, which means that every time the data is gathered, it targets a wide variety of different factors related to students´ wellbeing and health at the same time. The survey aims to gather information about students' physical health, mental health, eating habits, exercising habits, employment, economic state, family life etc. While this opens up a lot of possibilities

for interesting research questions, the limited space in a single study inevitably means that all of these factors cannot be studied in great depth.

In this thesis, the above limitation was mainly reflected on compromises with the predictor variables. First of all, deciding on a measure for social support proved difficult as the concept itself is rather broad and the data had different potential variables that could be loosely considered as an aspect of social support. For example, the students were asked whether they felt lonely, how often they have had interactions with friends, how they perceived their social wellbeing etc. As the interest was more broadly on social resources including guidance and counselling and sense of belonging to studying groups, it was decided to stick with the availability of people to talk to about important matters and perceived availability of support over the last week. As for the other two predictors, guidance and counselling from the educational institution and sense of belonging, the problem was that there were no options to choose from, and only single variables could be used. The lack of proper scales to measure the three social resources sets some limitations to this study as it is widely accepted that multivariable measures are more valid and reliable for measuring psychological constructs.

In addition to accuracy of measurement, there are some aspects of social resources that cannot be reached using these variables. First of all, while it was possible to distinguish between two sources of support (i.e. informal support and guidance from the educational staff), the nature of this support received remained unclear. This makes it difficult to compare the findings with those in existing literature. While the robust findings of negative associations of social support with burnout and positive associations with engagement were found in this student sample, comparisons of specific types and their relationships could not be made. More generally, many of the previous studies have also been unclear about the specific measure of support used. As Halbesleben (2006) points out in his meta-analysis, only a minority of studies on social support have explicitly stated which kind of support (e.g. emotional vs. instrumental) has been measured. Explicitly including the type of support experienced would provide a deeper picture of the relationships with students´ wellbeing (Malecki & Demaray, 2003). Same limitations exist with sense of belonging measured in this thesis. It would be beneficial to be able to differentiate between various groups that exist in the educational context. For example,

there is at least some indication that identifying with university friend groups specifically could protect students from psychological distress (McIntyre et al., 2018).

Secondly, it should be emphasized that although significant associations were found, the cross-sectional nature of the data does not warrant any conclusions about the causal direction of these relationships. Using only cross-sectional evidence, it is impossible to verify if social resources are in fact reducing the risk for burnout and increasing engagement. The results can also indicate that those who are already suffering from symptoms of burnout might be less active in seeking supportive contact with others or feel less connected to their surrounding student networks and groups. For example, in a recent study by Zochil and Thorsteinsson (2018), students experiencing high stress, anxiety and depression also had decreased intentions to look for help. The stressors from studies might also carry over to the social domain causing problems in relationships with others (Pluut et al., 2015). Similarly, those students who feel engaged and energized with their studies, and perhaps life in general, might have more energy to invest in their relationships and taking part of different group activities. It can also be that engaged students, who by definition see their studies as more meaningful, are more inclined to ask for feedback and guidance from their lecturers or supervisors, which in turn would further foster engagement. This would be an example of a positive gain spiral noted in the JD-R model (Llorens, Schaufeli, Bakker & Salanova, 2007). Addressing this question of causal direction calls for more research using longitudinal data.

Another consideration is that as the interest in this study was in the overall risk for burnout and levels of engagement, only total scores of the corresponding scales were used in the analyses. However, recent studies have started utilizing a person oriented approach for more nuanced picture of these constructs in relation to each other (Salmela-Aro & Upadyaya, 2014; Salmela-Aro & Read, 2017). The aim is to discover distinct profiles of students with specific combination on the subscales of burnout and engagement. These studies indicate that in addition to the expected groups of engaged and burned out students, a group of engaged-exhausted students can also be identified. This finding is important because it suggests that not all forms of engagement are always beneficial. This kind of profile has been linked to increases in short term academic performance but ultimately lead to negative consequences such as depression, burnout and decreased engagement (Salmela-Aro, 2015).

Conclusions

The results obtained in this thesis highlight the importance of social support, guidance and sense of belonging as valuable resources for higher education students. Given the role of these different social resources in maintaining wellbeing, it is important to make sure students do not get left alone with their problems and more generally to build a supportive and accepting culture around higher education. Support comes in many forms and attention should be paid to both informal support received in daily interactions as well as formal guidance activities provided by the educational institutions. The results indicate that investing in support activities from educational institutions is a valuable investment which pays back through increased engagement and less exhausted students. This notion is especially topical now as the reforms in higher education have led to cuts in funding, which in turn have meant gradual reduction in staff since 2010 (Wennberg, Korhonen & Koramo, 2018). The results of this thesis suggest that support services for students should not be the first thing to target with these cuts as doing so might lead to increased risk for students burning out under the demands of studies. Additionally, sufficient support would help students feel more engaged in their studies and manage to graduate on time. Furthermore, the results show that fostering sense of belonging to the student community has an important role for adjustment to different challenges of higher education.

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APPENDICES

Appendix 1. SBI-9 (Questions 1-9) and Schoolwork Engagement Scale (Questions 10-18) (Salmela-Aro, 2009) as used in FSHS 2016. Subscales added in brackets.

		Completely disagree	Disagree	Partly disagree	Partly agree	Agree	Completely agree
1	I overwhelmed by the work related to my studies (Exhaustion)	1	2	3	4	5	6
2	I feel a lack of motivation in my studies and often think of giving up (Cynicism)	1	2	3	4	5	6
3	I often have feelings of inadequacy in my studies (Inadequacy)	1	2	3	4	5	6
4	I often sleep badly because of matters related to my studies (Exhaustion)	1	2	3	4	5	6
5	I feel that I am losing interest in my studies (Cynicism)	1	2	3	4	5	6
6	I'm continuously wondering whether my studies have any meaning (Cynicism)	1	2	3	4	5	6
7	I brood over matters related to my studies a lot during my free time (Exhaustion)	1	2	3	4	5	6
8	I used to have higher expectations of of my studies than I do now (Inadequacy)	1	2	3	4	5	6
9	The pressure of my studies causes me problems in my close relationships with others (Exhaustion)	1	2	3	4	5	6
10	When I am studying, I feel bursting with energy (Vigour)	1	2	3	4	5	6
11	I find my studies full of meaning and purpose (Dedication)	1	2	3	4	5	6
12	Time flies when I am studying (Absorption)	1	2	3	4	5	6
13	I feel strong and vigorous when I am studying (Vigour)	1	2	3	4	5	6
14	I am enthusiastic about my studies (Dedication)	1	2	3	4	5	6
15	When I am studying, I forget everything else around me (Absorption)	1	2	3	4	5	6
16	My studies inspire me (Dedication)	1	2	3	4	5	6
17	When I wake up in the morning, I feel like going to my studies (Vigour)	1	2	3	4	5	6
18	I am immersed in my studies (Absorption)	1	2	3	4	5	6

Appendix 2. Factor analysis for SBI-9 and Schoolwork Engagement Scale.

Variables	F1	F2	Communality
SBI-9			
I brood over matters related to my studies a lot during my free time	**.775**		.555
I often have feelings of inadequacy in my studies	**.763**		.561
The pressure of my studies causes me problems in my close relationships with others	**.716**		.448
I often sleep badly because of matters related to my studies	**.698**		.434
I used to have higher expectations of of my studies than I do now	**.611**	-.235	.514
I feel overwhelmed by the work related to my studies	**.583**	.126	.345
I'm continuously wondering whether my studies have any meaning	**.545**	-.273	.534
I feel a lack of motivation in my studies and often think of giving up	.497	-.402	.624
I feel that I am losing interest in my studies	.478	-.456	.673
Schoolwork Engagement Scale			
I am enthusiastic about my studies		**.867**	.730
My studies inspire me		**.859**	686
I feel strong and vigorous when I am studying		**.811**	.685
I am immersed in my studies		**.807**	.635
Time flies when I am studying		**.783**	.586
I find my studies full of meaning and purpose		**.777**	.605
When I wake up in the morning, I feel like going to my studies	-.119	**.730**	.606
When I am studying, I feel bursting with energy	-.145	**.720**	.617
When I am studying, I forget everything else around me	.105	**.717**	513

Maximum likelihood, Direct Oblimin, KMO = .944, Bartlett = p<0.001. Factor loadings below 0.1 omitted

Appendix 3. Factor analysis for the three components of SBI-9.

Variables	F1	F2	F3	Communality
I brood a lot over matters related to studying during my free time **(Exhaustion)**	**.775**			.545
I feel overwhelmed by the work related to my studies **(Exhaustion)**	**.713**			.344
I often sleep badly because of matters related to my studies **(Exhaustion)**	**.671**	.121		.431
The pressure of studying is causing me problems in my close relationships with others **(Exhaustion)**	**.661**			.440
I often have feelings of inadequacy in my studies **(Inadequacy)**	**.520**	.182	.193	.549
I feel that I am losing interest in my studies **(Cynicism)**		**.919**		.642
I feel a lack of motivation in my studies and often think of giving up **(Cynicism)**		**.845**		.614
I'm continuously wondering whether studying has any meaning **(Cynicism)**		**.665**		.522
I used to have higher expectations of studying than I do now **(Inadequacy)**			**.994**	.500

Maximum likelihood, Direct Oblimin, KMO = .895, Bartlett = p< 0.001. Factor loadings below 0.1 omitted

Appendix 4. Factor analysis for the three components of Schoolwork Engagement Scale.

Variables	F1	F2	F3	Communality
I find my studies full of meaning and purpose **(Vigour)**	**.946**			.675
Time flies when I am studying **(Absorption)**	**.801**			.579
When I am studying, I feel bursting with energy **(Vigour)**	**.653**	.149		.579
When I am studying, I forget everything else around me **(Absorption)**	**.616**		.187	.503
I am enthusiastic about my studies **(Dedication)**		**.895**		.720
I find my studies full of meaning and purpose **(Dedication)**		**.846**		.575
My studies inspire me (**Dedication)**		**.765**		.683
When I wake up in the morning, I feel like going to my studies **(Vigour)**		**.575**	.215	.585
I am immersed in my studies **(Absorption)**		.299	**.524**	.624

Maximum likelihood, Direct Oblimin, KMO = .942, Bartlett = p< 0.001. Factor loadings below 0.1 omitted